



PRELIMINARY REPORT INDUSTRY SERIES

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1982 Census of Mineral Industries

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BAUXITE, FERROALLOY ORES, METAL MINING SERVICES, AND MISCELLANEOUS METAL ORES
(Industries 1051, 1061, 1081, 1092, 1094, and 1099)

This report presents preliminary statistics from the 1982 Census of Mineral Industries. The 1982 data are subject to change in the final reports, which will be issued at a later date. Final data will be presented first in paperbound reports and then in a bound volume of Subject, Industry, and Geographic Area Statistics. The final volume will include a comprehensive discussion of the concepts and definitions used in the census.

The total value of shipments and receipts for Industry 1051, Bauxite and Other Aluminum Ores, was \$30 million in 1982, while the value of shipments of products classified as being primary to this industry was \$22 million. Value added by mining was \$20 million. Total employment for the industry remained at .4 thousand employees from 1977 to 1982. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing bauxite and other aluminum ores. Also included are associated activities such as drying, calcining, activating, and sintering.

The total value of shipments and receipts for Industry 1061, Ferroalloy Ores, Except Vanadium, was \$205 million in 1982, while the value of shipments of products classified as being primary to this industry was \$332 million. Value added by mining was \$162 million. Total employment for the industry decreased to 4.7 thousand employees in 1982, a decrease of approximately 27 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing ferroalloy ores, except vanadium. The mining of manganiferous ores valued chiefly for their iron content is classified in Industry 1011, Iron Ores. Titanium ore, used sometimes for ferroalloying, but principally for other purposes is classified in Industry 1099, Metal Ores, N.E.C. Mining vanadium is classified in Industry 1094, Uranium-Radium-Vanadium Ores.

The total value of shipments and receipts for Industry 1081, Metal Mining Services, was \$125 million in 1982, while the receipts for services classified as being primary to this industry was \$118 million. Value added by mining was \$89 million. Total employment for the industry decreased to 2.3 thousand employees in 1982, a decrease of approximately 30 percent from 1977. Establishments in this industry are those primarily engaged in performing metal mining services for others on a contract, fee, or similar basis, such as the removal of overburden, strip mining for metallic ores, prospect and test drilling, and mine exploration and development.



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Establishments classified in industry 1081 were required to submit one report covering all mining services performed in the United States. These reports were classified on the basis of the principle type of service performed and the principle industry served to determine their industrial classification. Each report included data on the amount received for services by State and county. For geographic area statistics, all figures in each respondent report were allocated on the basis of these reported data.

The total value of shipments and receipts for Industry 1094, Uranium-Radium-Vanadium Ores, was \$790 million in 1982, while the value of shipments of products classified as being primary to this industry was \$778 million. Value added by mining was \$597 million. Total employment for the industry decreased to 10.6 thousand employees in 1982, a decrease of approximately 12 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing uranium-radium-vanadium ores.

The total value of shipments and receipts for Industry 1092, Mercury Ores, and Industry 1099, Metal Ores, N.E.C., was \$127 million in 1982, while the value of shipments of products classified as being primary to these industries was \$121 million. Value added by mining was \$93 million. Total employment for these industries increased to 1.8 thousand employees in 1982, an increase of approximately 20 percent from 1977. Establishments in the mercury ores industry are those primarily engaged in mining, milling, or otherwise preparing mercury ores. This industry includes the production of metallic mercury by furnacing or retorting at the mine site. Establishments in the metal ores, n.e.c., industry are those primarily engaged in mining, milling, or otherwise preparing miscellaneous metal ores not elsewhere classified.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹ The industry statistics (employment, payroll, value of shipments and receipts, cost of supplies, etc.) are reported for each establishment as a whole. Industry aggregates of these data measure not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities performed by the same establishments. This fact should be taken into account in comparing industry statistics (tables 1, 2, 4a, and 4b) with product statistics (table 3) showing shipments by all industries of the primary products of the specified industry. (See appendix for a discussion of the difference between value of shipments and receipts for the industry and value of product shipments.) All dollar figures shown in this report are in current dollars for the years specified and have not been adjusted for changes in price levels. Therefore, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The methods of data collection which include the use of administrative-record data are discussed in detail in the appendix. Small single-unit companies (the cutoff varied by industry) were not mailed a questionnaire. For these establishments (and a small number of larger establishments whose reports were not received at the time of tabulation), some employment, payroll, and receipt data were obtained from administrative records of other government agencies. These data were then used in conjunction with industry averages to estimate the statistics for the administrative-record and nonresponse establishments.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

There were no establishments for which administrative records were used in the bauxite and other aluminum ores industry because all establishments of single-unit companies in this industry were included in the mail portion of the census. Single-unit establishments in the ferroalloy ores, except vanadium, industry with less than 8 employees were not mailed questionnaires; for the metal mining services industry it was 2 employees; for the uranium-radium-vanadium ores industry it was 9 employees; and for the mercury ores and metal ores, n.e.c., industries it was 2 employees. These establishments in the ferroalloy ores, except vanadium industry accounted for 6 percent of the total value of shipments and receipts; in the metal mining services industry they accounted for 1 percent; in the uranium-radium-vanadium industry they accounted for 1 percent; and in the mercury ores and metal ores, n.e.c., industries they accounted for 5 percent.

The following abbreviations and symbols are used in the tables in this publication:

- Represents zero.
(D) Withheld to avoid disclosing data for individual companies.
(NA) Not available.
(S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X) Not applicable.
(Z) Less than half the unit shown.
n.e.c. Not elsewhere classified.
n.s.k. Not specified by kind.
r Revised.
SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, and bbl, are used in the customary sense. Where the term "tons" only is used, it refers to short tons of 2,000 pounds; where the figures are expressed in tons of 2,240 pounds, the unit of measure is specified as "long tons" or "1. tons."

Table 1. Historical Industry Statistics: 1982 and Earlier Years

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Year	Companies (number)	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Value of net ship- ments and receipts ¹ (million dollars)	Quantity of primary products ²	Capital expendi- tures (million dollars)
		Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 1051, BAUXITE AND OTHER ALUMINUM ORES														
1982 ³	7	10	4	.4	9.3	.2	.4	5.8	20.4	14.9	29.9	(D)	(D)	5.4
1977 ³	7	12	6	.4	6.8	.3	.6	4.4	31.0	13.2	40.2	(D)	(D)	4.0
1972 ³	7	10	5	.5	4.4	.3	.6	2.8	24.0	7.7	28.1	(D)	(D)	3.6
1967 ³	(NA)	17	7	.6	4.1	.5	.8	2.9	22.5	6.7	28.8	(D)	(D)	.4
1963	10	17	4	.6	3.4	.4	.8	2.3	17.5	4.3	21.5	⁴ 20.5	⁵ 1 478.0	.3
1958	12	29	9	.7	3.6	.5	.9	2.3	15.4	4.2	18.2	17.4	⁵ 1 420.0	1.4
INDUSTRY 1061, FERROALLOY ORES, EXCEPT VANADIUM														
1982 ³	57	69	16	4.7	149.8	3.0	5.7	88.1	162.0	169.2	205.4	(D)	(D)	125.8
1977 ³	41	56	17	6.4	107.1	5.0	9.7	79.1	255.6	224.9	371.7	(D)	(D)	108.8
1972 ³	32	44	15	3.8	40.2	2.8	5.4	28.7	136.7	63.8	164.3	(D)	(D)	36.2
1967 ³	(NA)	43	11	4.0	31.9	3.1	6.2	23.0	73.5	47.5	108.3	(D)	(D)	12.6
1963	48	58	11	3.1	20.4	2.6	4.9	15.2	66.4	30.2	90.7	(NA)	(X)	5.8
1958	286	294	33	5.4	26.7	4.4	8.3	19.5	74.3	43.9	111.5	(NA)	(X)	6.5
INDUSTRY 1081, METAL MINING SERVICES														
1982 ³	(NA)	⁶ 395	⁶ 22	2.3	59.2	1.7	3.6	41.2	89.0	62.7	124.6	124.6	(X)	27.1
1977 ³	(NA)	270	42	3.3	51.5	2.7	5.9	41.3	111.6	64.6	158.4	158.4	(X)	17.7
1972 ³	(NA)	172	33	2.8	30.9	2.4	5.0	26.2	54.2	21.3	71.6	71.6	(X)	3.9
1967 ³	(NA)	148	34	2.6	19.1	2.4	4.5	16.3	33.6	17.2	48.3	48.3	(X)	2.3
1963	(NA)	83	17	2.2	13.9	1.9	4.0	11.5	24.7	10.7	32.4	32.4	(X)	3.0
1958	(NA)	95	23	2.2	12.1	2.0	4.3	10.6	22.9	10.8	32.4	32.4	(X)	1.3
INDUSTRY 1094, URANIUM-RADIUM-VANADIUM ORES														
1982 ³	(NA)	218	74	10.6	288.9	7.2	14.4	179.8	596.9	421.4	789.8	712.5	6 662.2	228.5
1977 ³	(NA)	225	66	12.0	203.2	9.6	20.0	155.2	431.6	435.0	614.5	545.4	13 363.2	252.1
1972 ³	(NA)	144	34	5.9	58.0	4.6	9.8	43.0	149.4	120.3	227.2	201.9	7 200.0	42.5
1967 ³	(NA)	188	34	5.4	40.5	4.1	8.5	28.9	142.1	116.6	218.2	182.6	5 500.0	40.5
1963	(NA)	335	51	6.7	45.2	5.1	11.3	34.2	190.6	151.7	326.4	244.7	6 383.0	15.9
1958 ⁷	(NA)	602	61	7.9	44.4	6.4	13.9	34.4	174.8	263.2	336.5	227.0	5 480.0	101.6
INDUSTRY 1092, MERCURY ORES AND 1099, METAL ORES, N.E.C.														
1982 ³	(NA)	225	16	1.8	37.1	1.3	2.7	25.6	92.5	50.3	127.0	(D)	(X)	15.8
1977 ³	(NA)	150	14	1.5	24.2	1.1	2.2	14.4	70.8	33.9	96.9	(D)	(X)	7.9
1972 ³	(NA)	119	12	1.3	12.8	1.1	2.1	9.1	30.7	28.8	44.8	(D)	(X)	14.6
1967 ³	(NA)	107	19	1.9	13.5	1.6	3.2	10.7	32.7	21.1	48.9	(D)	(X)	4.9
1963	(NA)	82	12	1.5	9.2	1.3	2.5	7.4	19.2	12.6	28.7	28.1	(X)	3.1
1958	(NA)	156	18	1.9	8.7	1.5	2.8	6.4	21.7	11.1	28.8	(D)	(X)	4.0

Note: For data prior to 1958, see 1963 Census of Mineral Industries, volume I, table 1 of industry chapter.

¹Value of gross shipments less value of crude minerals transferred to other establishments for preparation. For service industries, represents total receipts less value of resales.

²Represents thousand short tons.

³Beginning with 1967, data for single-unit establishments without paid employees were excluded from the census.

⁴Represents value of net shipments of primary products only.

⁵Represents gross shipments in long tons less shipments to treatment plants for bauxite and dried bauxite equivalent.

⁶Data for 1982 are not comparable to prior years. Service companies were permitted to prepare one report for all mining services performed in the United States. Total shown for establishments represent summation of operations within each county allocated from nationwide reports.

⁷Excludes data for Alaska.

Table 2. Industry Statistics for Selected States and Type of Operation: 1982 and 1977

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Industry, geographic area, and type of operation	1982												1977	
	E ¹	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)
		Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 1051, BAUXITE AND OTHER ALUMINUM ORES														
Geographic Area														
United States -----	-	10	4	.4	9.3	.2	.4	5.8	20.4	14.9	29.9	5.4	.4	31.0
Arkansas -----	-	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Type of Operation														
Producing establishments -----	-	10	4	.4	9.3	.2	.4	5.8	20.4	14.9	29.9	5.4	.4	31.0
Mines only -----	-	6	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Open pit -----	-	6	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States and Type of Operation: 1982 and 1977—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Industry, geographic area, and type of operation	1982											1977		
	E ¹	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)
		Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 1061, FERROALLOY ORES, EXCEPT VANADIUM														
Geographic Area														
United States	-	69	16	4.7	149.8	3.0	5.7	88.1	162.0	169.2	205.4	125.8	6.4	255.6
Alaska	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	-	7	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Colorado	-	12	5	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Michigan	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nevada	E2	8	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
New Mexico	E9	4	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Type of Operation														
Producing establishments	-	61	14	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Mines with preparation plants	-	6	6	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Underground	-	5	5	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Combination and other mining methods	-	1	1	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Undistributed ³	E4	54	7	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nonproducing establishments	-	8	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
INDUSTRY 1081, METAL MINING SERVICES														
Geographic Area														
United States	E1	4395	422	2.3	59.2	1.7	3.6	41.2	89.0	62.7	124.6	27.1	3.3	111.6
Alaska	-	6	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Arizona	-	27	2	.2	4.7	.2	.3	3.4	9.2	4.6	12.2	1.6	BB	(D)
Colorado	E4	47	3	.3	8.8	.3	.6	6.8	7.6	4.4	10.5	1.5	BB	(D)
Idaho	-	14	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nevada	E3	54	5	.3	6.3	.2	.5	4.7	10.1	6.6	15.4	1.3	.2	6.9
New Mexico	-	24	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	21.2
Utah	E1	22	2	.1	3.3	.1	.2	1.9	4.8	2.5	6.7	.6	BB	(D)
INDUSTRY 1094, URANIUM-RADIUM-VANADIUM ORES														
Geographic Area														
United States	E1	218	74	10.6	288.9	7.2	14.4	179.8	596.9	421.4	789.8	228.5	12.0	431.6
Arkansas	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Colorado	E3	61	18	2.2	58.0	1.4	2.9	35.6	161.2	74.0	123.6	111.6	1.6	24.1
New Mexico	-	29	13	2.9	80.6	2.3	4.7	57.1	155.8	(D)	243.8	(D)	5.2	201.2
New York	-	1	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Texas	E2	25	9	1.4	36.3	.8	1.8	21.7	66.6	49.0	90.6	25.0	CC	(D)
Utah	-	27	5	.7	17.4	.5	1.0	12.3	14.0	45.8	52.0	7.8	.7	30.9
Washington	-	5	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Wyoming	-	32	17	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Type of Operation														
Producing establishments	E1	166	58	9.3	252.2	6.2	12.3	153.2	538.0	387.5	789.8	135.7	10.3	450.0
Mines only	E4	107	22	2.8	68.6	2.2	4.3	52.3	167.3	131.1	199.7	98.7	EE	(D)
Underground	E4	104	19	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Open pit	-	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Mines with preparation plants	-	20	20	4.6	123.2	3.8	7.4	95.2	364.4	190.6	520.4	34.6	7.6	355.1
Underground	-	4	4	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Open pit	-	10	10	1.6	43.5	1.3	2.5	32.4	129.3	80.5	185.4	24.4	EE	(D)
Combination and other mining methods	-	6	6	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.0	64.6
Separately operated preparation plants	-	8	4	.4	10.1	.3	.5	5.7	6.4	65.8	69.7	2.5	BB	(D)
Undistributed ³	-	31	12	1.6	50.3	-	-	-	-	-	-	-	.5	-
Nonproducing establishments	-	52	16	1.3	36.7	1.0	2.2	26.6	58.8	34.0	-	92.8	1.6	-18.4
INDUSTRY 1092, MERCURY ORES AND 1099, METAL ORES, N.E.C.														
Geographic Area														
United States	E3	225	16	1.8	37.1	1.3	2.7	25.6	92.5	50.3	127.0	15.8	1.5	70.8
California	E1	28	5	.4	8.8	.3	.6	6.2	24.4	16.6	37.8	3.3	AA	(D)
Colorado	E6	28	2	.2	5.3	.1	.3	2.2	6.1	2.5	7.5	1.1	(NA)	(NA)
Florida	-	5	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Nevada	E3	27	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Type of Operation														
Producing establishments	E3	207	16	1.6	35.3	1.3	2.6	24.5	90.5	48.9	127.0	12.4	1.5	71.0
Mines with preparation plants	-	9	5	.7	15.9	.5	1.0	11.1	46.5	30.6	72.2	4.9	1.2	63.6
Open pit	-	7	5	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Undistributed ³	E6	196	11	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Nonproducing establishments	-	18	-	.1	1.7	(Z)	.1	1.0	1.9	1.5	-	3.4	(Z)	-2

See footnotes at end of table.

Table 2. Industry Statistics for Selected States and Type of Operation: 1982 and 1977—Con.

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Data lines with less than 100 employees are not shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 100 or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA—100 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

³Includes data for separately operated auxiliary establishments which were not classified by type of operation.

⁴Data for 1982 are not comparable to prior years. Service companies were permitted to prepare one report for all mining services performed in the United States. Totals shown for establishments represent summation of operations within each county allocated from nationwide reports.

Table 3. Products or Services for Selected States: 1982 and 1977

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product code	Geographic area and product	1982			1977						
		Quantity of production for all purposes	Product shipments		Quantity of production for all purposes	Product shipments					
			Quantity	Value (million dollars)		Quantity	Value (million dollars)				
	BAUXITE AND OTHER ALUMINUM ORES										
	United States										
1051—	Bauxite and other aluminum ores	(X)	(X)	21.5	(X)	(X)	37.3				
10511 00	Crude (undried) bauxite 1,000 l. tons	(D)	(D)	(D)	(D)	(D)	(D)				
10512 00	Prepared bauxite, dried, calcined, or activated do	(D)	(D)	(D)	(D)	(D)	(D)				
10510 00	Bauxite, n.s.k. ¹	(X)	(X)	-	(X)	(X)	-				
	FERROALLOY ORES, EXCEPT VANADIUM										
	United States										
1061—	Ferroalloy ores, except vanadium	(X)	(X)	331.6	(X)	(X)	526.8				
10611 2—	Crude manganese ores	}	(X)	53.6	(X)	(X)	104.5				
10611 51	Other crude ferroalloy ores such as chromium, molybdenum, nickel, and tungsten										
10612 29	Ferroalloy concentrates (except molybdenum and vanadium), such as chromium, manganese, nickel, and tungsten										
10610 00	Ferroalloy ores, except vanadium, n.s.k. ¹	45.0	43.0	278.0	83.7	85.4	422.3				
10612 31	Molybdenum concentrates 1,000 s. tons										
Service code	Geographic area and service	1982 receipts for services (million dollars)			1977 receipts for services (million dollars)						
	METAL MINING SERVICES										
	United States										
1081—	Metal mining services							117.6			158.4
10810 11	Exploration work, including geophysical and other exploratory surveying			18.7			19.4				
10810 12	Stripping overburden			(D)			(D)				
10810 13	Prospect and test drilling			37.0			70.2				
10810 14	Open pit metal mining ores not for own account			(D)			5.7				
10810 15	Drilling, other than prospect and test drilling, including blasting			(D)			3.1				
10810 17	Sinking mine shafts and driving mine tunnels			(D)			19.7				
10810 19	Other metal mining services			12.1			(D)				
10810 00	Metal mining services, n.s.k. ¹			25.3			20.6				
Product code	Geographic area and product	1982			1977						
		Quantity of production for all purposes	Product shipments		Quantity of production for all purposes	Product shipments					
			Quantity	Value (million dollars)		Quantity	Value (million dollars)				
	MERCURY ORES										
	United States										
1092—	Mercury ores	(X)	(X)	(D)	(X)	(X)	(NA)				
10921 00	Crude mercury ores 1,000 s. tons	(D)	-	-	(D)	(NA)	(NA)				
10923 00	Mercury metal flasks, 76 lb.	(D)	(D)	(D)	(NA)	(D)	(D)				
10920 00	Mercury, n.s.k. ¹	(X)	(X)	-	(X)	(X)	(NA)				
	URANIUM-RADIUM-VANADIUM ORES										
	United States										
1094—	Uranium-radium-vanadium ores	(X)	(X)	777.8	(X)	(X)	617.7				
10941 —	Crude uranium-vanadium ores mil. s. tons	6.7	1.7	86.9	13.4	2.5	72.7				
10941 01	Crude uranium-vanadium ores shipped do	(X)	1.7	86.9	(X)	2.5	72.7				
10941 03	From underground operations do	2.8	(X)	(X)	5.6	(X)	(X)				
10941 05	From open pit operations do	3.9	(X)	(X)	7.7	(X)	(X)				
10942 —	Uranium-vanadium concentrates 1,000 s. tons	19.0	16.8	583.6	23.6	28.9	2509.9				
10942 01	Uranium concentrates do	9.0	8.4	539.2	23.6	28.9	2509.9				
10942 02	Vanadium concentrates do	10.0	8.4	44.4							
10940 00	Uranium-radium-vanadium ores, n.s.k. ¹	(X)	(X)	107.3	(X)	(X)	35.0				

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product code	Geographic area and product	1982			1977		
		Quantity of production for all purposes	Product shipments		Quantity of production for all purposes	Product shipments	
			Quantity	Value (million dollars)		Quantity	Value (million dollars)
	MISCELLANEOUS METAL ORES, N.E.C.						
	United States						
1099—	Metal ores, n.e.c.	(X)	(X)	120.7	(X)	(X)	392.7
10991—	Titanium ores..... 1,000 s. tons..	5 708.4	249.5	24.2	12 320.7	(D)	(D)
10991 11	Crude titanium ores (ilmenite and rutile)	5 462.9	—	—	11 697.7	(D)	(D)
10991 21	Titanium concentrates (ilmenite and rutile)	245.5	249.5	24.2	623.0	544.2	32.1
10999—	Miscellaneous metal ores, such as antimony, beryllium, rare-earth metals, and tin	(S)	(S)	44.5	670.3	354.2	(D)
10999 11	Miscellaneous crude metal ores, such as antimony, beryllium, rare-earth metals and tin	(D)	(D)	(D)	369.5	60.3	(D)
10999 21	Miscellaneous metal concentrates, such as antimony, beryllium, rare-earth metals, and tin	(S)	(S)	(D)	300.8	293.9	45.4
10990 00	Metal ores, n.s.k. ¹	(X)	(X)	52.0	(X)	(X)	39.3

¹Includes value for establishments that did not report detailed data and estimates for small companies (estimates were made from administrative-record data rather than collected from respondents).

²Includes slurry and low-grade concentrates shipped to mills for further upgrading.

³Includes value for mercury ores.

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Supply code	Industry and supply consumed	1982		1977	
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1051, BAUXITE AND OTHER ALUMINUM ORES				
	Selected supplies used, minerals received for preparation, and purchased machinery installed	(X)	8.5	(X)	7.8
100097	Minerals or ores for preparation:				
105191	Crude ores and concentrates (except bauxite) received for treatment	—	—	(D)	(D)
105191	Bauxite (crude or dried) received for concentration	(D)	(D)	(D)	(D)
105191	Bauxite (crude or dried) produced and concentrated at same establishment	(D)	(X)	(NA)	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment	(X)	(D)	(X)	(D)
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery	(X)	(D)		
280110	Supplies used:				
289211	Industrial chemicals (chemical reagents, calcium chloride, fatty acids, etc.), except explosive materials and blasting accessories	(X)	(D)	(X)	(¹)
289212	Explosive materials, except ammonium nitrate	(D)	(D)	(X)	(D)
289212	Ammonium nitrate	(X)	(D)		
289214	Blasting accessories	(X)	(D)	(X)	(¹)
290000	Lubricating oils and greases, including hydraulic oils	(X)	(D)	(X)	(¹)
301100	Tires and inner tubes	(X)	(D)	(X)	(¹)
330900	Steel castings, steel forgings, and metallic grinding media	(X)	(D)	(X)	(¹)
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes)	(X)	(D)	(X)	(D)
353310	Drill bits and reamers	(X)	(D)	(X)	(¹)
970099	All other supplies ²	(X)	2.2	(X)	1.8
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	.1	(X)	(D)
	INDUSTRY 1061, FERROALLOY ORES, EXCEPT VANADIUM				
	Selected supplies used, minerals received for preparation, and purchased machinery installed	(X)	110.6	(X)	158.5
100093	Minerals or ores for preparation:				
100097	Crude manganese received for concentration	—	—	(D)	(D)
100097	Other ores and concentrates received for treatment	(D)	(D)	(D)	(D)
100097	Other ores and concentrates for treatment produced and treated at same establishment	(D)	(X)	(NA)	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment	(X)	(D)	(X)	55.4
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery	(X)	(D)		
145000	Supplies used:				
280110	Bentonite and other clay nonmetallic minerals	(X)	(D)	(X)	(¹)
289211	Industrial chemicals (chemical reagents, calcium chloride, fatty acids, etc.), except explosive materials and blasting accessories	(X)	5.9	(X)	(¹)
289212	Explosive materials, except ammonium nitrate	(X)	4.0	(X)	7.1
289212	Ammonium nitrate				
289214	Blasting accessories				

See footnotes at end of table.

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Supply code	Industry and supply consumed	1982		1977		
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 1061, FERROALLOY ORES, EXCEPT VANADIUM—Con.					
	Selected supplies used, minerals received for preparation, and purchased machinery installed—Con.					
	Supplies used:—Con.					
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	.7	(X)	(¹)	
301100	Tires and inner tubes.....	(X)	1.2	(X)	(¹)	
330900	Steel castings, steel forgings, and metallic grinding media.....	(X)	(D)	(X)	(¹)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	5.3	
353310	Drill bits and reamers.....	(X)	1.0	(X)	(¹)	
970099	All other supplies ²	(X)	(D)	(X)	60.0	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	2.6	(X)	1.1	
	INDUSTRY 1081, METAL MINING SERVICES					
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	51.0	(X)	51.8	
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	16.3	}	(X)	17.1
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	3.1			
	Supplies used:					
289212	Ammonium nitrate..... mil. lb.....	(D)	(D)	2.0	.2	
289218	Explosive materials (except ammonium nitrate) and blasting accessories.....	(X)	(D)	(X)	(¹)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	3.4	(X)	1.6	
970099	All other supplies.....	(X)	11.3	(X)	20.4	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	(D)	(X)	12.5	
	INDUSTRY 1094, URANIUM-RADIUM-VANADIUM ORES					
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	299.6	(X)	295.8	
	Minerals or ores for preparation:					
100097	Crude ores and concentrates received for treatment..... mil. s. tons.....	1.6	77.3	42.6	469.1	
100097	Crude ores and concentrates for treatment produced and treated at same establishment..... do.....	5.3	(X)	7.9	(X)	
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	28.7	}	(X)	104.8
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	18.8			
	Supplies used:					
280110	Industrial chemicals (chemical reagents, calcium chloride, fatty acids, etc.), except explosive materials and blasting accessories.....	(X)	50.0	(X)	(¹)	
289211	Explosive materials, except ammonium nitrate..... mil. lb.....	8.0	2.9	11.3	3.4	
289212	Ammonium nitrate..... do.....	2.4	.2	23.7	1.6	
289214	Blasting accessories.....	(X)	2.0	(X)	2.1	
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	1.8	(X)	(¹)	
301100	Tires and inner tubes.....	(X)	1.9	(X)	(¹)	
330900	Steel castings, steel forgings, and metallic grinding media.....	(X)	1.3	(X)	(¹)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	8.6	(X)	22.4	
353310	Drill bits and reamers.....	(X)	.8	(X)	(¹)	
970099	All other supplies ²	(X)	73.5	(X)	85.0	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	31.8	(X)	7.5	
	INDUSTRY 1092, MERCURY ORES AND 1099, METAL ORES, N.E.C.					
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	33.1	(X)	18.6	
	Minerals or ores for preparation:					
100097	Crude ores and concentrates received for treatment..... mil. s. tons.....	(D)	(D)	(D)	(D)	
100097	Crude ores and concentrates for treatment produced and treated at same establishment..... do.....	6.0	(X)	12.3	(X)	
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	4.7	}	(X)	3.9
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	(D)			
	Supplies used:					
280110	Industrial chemicals (chemical reagents, calcium chloride, fatty acids, etc.), except explosive materials and blasting accessories.....	(X)	(D)	(X)	(¹)	
289211	Explosive materials, except ammonium nitrate..... mil. lb.....	(D)	(D)	(D)	(D)	
289212	Ammonium nitrate..... do.....	(D)	(D)	.2	(Z)	
289214	Blasting accessories.....	(X)	(D)	(X)	(Z)	
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	(Z)	(X)	(¹)	
301100	Tires and inner tubes.....	(X)	(D)	(X)	(¹)	
330900	Steel castings, steel forgings, and metallic grinding media.....	(X)	(D)	(X)	(¹)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	3.4	
353310	Drill bits and reamers.....	(X)	(Z)	(X)	(¹)	
970099	All other supplies ²	(X)	6.4	(X)	8.6	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	11.4	(X)	(D)	

¹Cost for this supply is shown separately in 1982. In 1977, this category was included in all other supplies.

²A number of supplies included in the all other supplies category in 1977 are now shown separately.

³Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

⁴Includes ferrophosphorus and vanadium liquor received for preparation.

Table 4b. Fuels Consumed by Type, 1982 and 1977, and End-of-Year Fuel Stocks, 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Fuel code	Industry and fuel consumed	1982 consumption		1982 end-of-year stocks ¹ (quantity)	1977 consumption	
		Quantity	Delivered cost (million dollars)		Quantity	Delivered cost (million dollars)
	INDUSTRY 1051, BAUXITE AND OTHER ALUMINUM ORES					
	Fuels used	(X)	3.2	(X)	(X)	1.4
	Fuel oil:					
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	9.5	.4	(D)	(D)	(D)
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	(D)	(D)	(D)	(D)	(D)
131157	Gas—natural, manufactured, and mixed	(D)	(D)	(X)	.3	.4
291111	Gasoline .....	.1	.1	(D)	.2	.1
960018	Other fuels—liquefied petroleum gas, coke, wood, and other	(X)	(D)	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	(Z)	(X)	(X)	(Z)
	INDUSTRY 1061, FERROALLOY ORES, EXCEPT VANADIUM					
	Fuels used	(X)	10.0	(X)	(X)	6.7
121005	Coal—bituminous, lignite, and anthracite	(D)	(D)	(D)	(D)	(D)
	Fuel oil:					
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	52.0	2.3	(D)	144.9	2.4
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	(D)	(D)	(D)	(D)	(D)
131157	Gas—natural, manufactured, and mixed	(D)	(D)	(X)	1.9	2.3
291111	Gasoline .....	.4	.5	(D)	.9	.4
960018	Other fuels—liquefied petroleum gas, coke, wood, and other	(X)	(D)	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	.2	(X)	(X)	.2
	INDUSTRY 1081, METAL MINING SERVICES					
	Fuels used	(X)	5.8	(X)	(X)	5.7
121005	Coal—bituminous, lignite, and anthracite	(D)	(D)	-	-	-
	Fuel oil:					
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	46.8	2.1	.8	65.4	1.1
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	5.2	.2	-	(D)	(D)
131157	Gas—natural, manufactured, and mixed	(Z)	(Z)	(X)	(D)	(D)
291111	Gasoline	1.9	2.3	(D)	4.5	2.4
960018	Other fuels—liquefied petroleum gas, coke, wood, and other	(X)	(D)	(X)	(X)	(Z)
977000	Undistributed fuels ²	(X)	(D)	(X)	(X)	1.9
	INDUSTRY 1094, URANIUM-RADIUM-VANADIUM ORES					
	Fuels used	(X)	32.8	(X)	(X)	20.3
121005	Coal—bituminous, lignite, and anthracite	(D)	(D)	(D)	(Z)	(Z)
	Fuel oil:					
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	241.5	10.6	10.6	631.3	10.9
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	144.7	5.8	10.7		
131157	Gas—natural, manufactured, and mixed	3.0	9.6	(X)	3.7	5.8
291111	Gasoline	2.0	2.4	.3	3.8	2.0
960018	Other fuels—liquefied petroleum gas, coke, wood, and other	(X)	(D)	(X)	(X)	.5
977000	Undistributed fuels ²	(X)	2.6	(X)	(X)	1.1
	INDUSTRY 1092, MERCURY ORES AND 1099, METAL ORES, N.E.C.					
	Fuels used	(X)	6.8	(X)	(X)	3.8
121005	Coal—bituminous, lignite, and anthracite	-	-	-	(D)	(D)
	Fuel oil:					
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	80.2	3.7	2.2	178.6	2.6
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	(D)	(D)	(D)		
131157	Gas—natural, manufactured, and mixed	(D)	(D)	(X)	(Z)	(Z)
291111	Gasoline .....	.2	.3	(D)	.3	.2
960018	Other fuels—liquefied petroleum gas, coke, wood, and other	(X)	(D)	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	1.4	(X)	(X)	.7

¹Fuel stocks were collected for the first time in 1982.

²Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

APPENDIX

Scope and Coverage and Explanation of Terms

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of mineral industries covers each mining establishment of firms with one paid employee or more operating in the United States. A firm operating more than one establishment is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are asked to submit separate reports if records permit such a separation and the activities are of significant size.

Statistics for employment and payroll for individual industries and industry groups also include employment and payroll figures for administrative offices, warehouses, storage facilities, and other auxiliary establishments servicing mining establishments. Respondents were asked to file separate reports for any separately operated auxiliary establishments. Classification of employment and payroll data at such auxiliary establishments was based on the mining establishments served.

For oil and gas field operations and for contract services, the basis for reporting was different from the "establishment" basis used for other types of mining. Firms operating oil and gas wells, drilling wells, or exploring for oil and gas for their own account, were required to submit a separate report for each State or offshore area adjacent to a State in which it conducted such activities and to include employment, production, and capital expenditures data at the county level. Firms which supplied contract services for oil and gas field operations or for mining establishments were required to submit one report covering all such activities in the United States and to include information on receipts for services by State and county. These consolidated reports were then allocated to county establishments based on the data reported at the county level.

Use of Administrative Records

From a mailout universe of 36,000 mining establishments, approximately 11,000 small single establishment companies were not mailed a questionnaire. For these establishments, some employment, payroll, and receipts data were obtained from the administrative records of other agencies. Selection of the small establishment nonmail cases was done on an industry-by-industry basis, and a variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. This information was then used in conjunction with industry averages to estimate the statistics for administrative-record and nonresponse establishments. The value of shipments and receipts and cost of supplies were not distributed among specific products and supplies for these establishments, but were included in the product and supply "not specified by kind" categories. Overall, establishments for which administrative-record data were used accounted for less than 3 percent of total value of shipments.

Value of Shipments and Receipts for the Industry Compared to Value of Product Shipments

Figures for value of shipments and receipts represent the total shipments and receipts for all establishments classified

in this industry and include products primary to the industry, products classified as primary in other industries but secondary to this industry, and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments represents products classified as primary to this industry that were shipped by all mining and manufacturing establishments, regardless of their industry classification.

EXPLANATION OF TERMS

All employees—This item includes all full-time and part-time employees on the payrolls of operating mineral establishments for any part of the pay period including the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacation during these pay periods. Officers of the corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for the midmonth payroll periods of March, May, August, and November.

Payroll—This item includes all forms of compensation; such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if it is a corporation; it excludes payments to the proprietor or partners, if it is an unincorporated concern. Respondents were told that in reporting they could follow the definition of payroll used for calculating the Federal withholding tax.

Production-, development-, and exploration-worker hours—This item represents all hours that production, development, and exploration workers worked both on active days during which there was production or development work and on inactive days when only guards, inspectors, repairpersons, and other maintenance persons were on duty. It includes all hours worked or paid for at the mining operations, except hours for paid vacations, holidays, or sick leave, when the employee was not at the establishment. Included are actual overtime hours, not straight-time equivalent hours. Hours of working proprietors or partners are excluded.

Cost of supplies used, purchased machinery installed, etc.—This cost includes supplies, minerals received for preparation, and purchased machinery installed, fuels and electric energy used, contract work done by others, and cost of products bought and resold without further processing. It includes charges to both the current and capital accounts. It also includes the cost of items used during 1982, whether they were purchased, withdrawn from inventories, or received from other establishments of the company. Supplies and equipment used in mine development, plant expansion, and capitalized repairs, which are chargeable to fixed assets accounts, were included, as were supplies furnished without charge to contractors for

use at the mining operation and supplies sold to employees for use at the establishment. No data on such costs as advertising, insurance, telephone, and research and consulting services of other establishments; or on overhead costs, such as depreciation charges, rent, interest, and royalties were included in this item. For selected supplies and fuels and for electric energy, both quantity and cost data were requested. The cost data refer to direct charges actually paid or payable (after discounts) for items used during the year. Freight charges and other direct charges, incurred by the establishment in acquiring the item, are included. Where the company's records did not show actual amounts used, they were asked to approximate use by adding purchases (or receipts) during the year to beginning inventory and subtracting ending inventory.

Specific supplies used and minerals prepared—In addition to the total cost of supplies used and purchased machinery installed, etc., which every establishment was required to report, information was also collected on the consumption of major supplies used in mining. These inquiries were restricted to supplies which were important parts of the cost of production, exploration, and development of a particular industry and for which cost information was available from the firms' records.

On report forms for almost all mineral industries, except the contract services industries, a uniform inquiry was included on minerals prepared at the reported establishments. Figures were obtained on minerals prepared from three sources: (1) crude minerals mined at the establishment (quantity); (2) crude minerals received from others (quantity and cost); and (3) crude minerals received for preparation on a custom or toll basis (quantity and estimated value).

Establishments consuming less than a specified amount (usually \$25,000) were not requested to report separately the cost of a supply. Also, the cost of supplies for small establishments for which administrative records were used was estimated as "not specified by kind."

Specific fuels used and stocks on hand—This item includes the quantity and cost of fuels used in mining. For most industries, every establishment was required to report separate quantity and cost figures for purchased coal, distillate fuel oil, residual fuel oil, gas, and gasoline, and a cost figure for "other fuels," as shown in table 4b. The cost of fuels for small establishments for which administrative records were used were imputed as "not specified by kind."

In addition, figures for stocks of purchased fuels on hand at the end of the year were reported for the first time in 1982. Every establishment was required to report the total quantity of unexpended fuel it had on hand, including emergency reserves, at the end of the year. Excluded are fuels to be used as feedstocks or raw materials.

Value added by mining—This measure of mining activity is derived by subtracting the total cost of supplies used, purchased machinery installed, etc., from the sum of the value of shipments and receipts (mining products plus receipts for services rendered) and total capital expenditures.

This statistic avoids the duplication in value of shipments and receipts, which results from the use of products of some establishments as supplies, energy sources, or materials by others. Moreover, it provides a measure of value added, not only in mineral production, but also in the development of mineral properties. For these reasons, it is considered to be the best value measure for comparing the relative economic importance of mining among industries and geographic areas.

Value of shipments and receipts—This item includes the values, f.o.b. mine, well, or plant (exclusive of freight and taxes), of all primary and secondary products shipped, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sale of scrap, and sale of products bought and resold without further processing. Included are all items produced by the establishments and sold, transferred to other plants of the same company, or shipped on consignment.

In the case of multiunit companies, the firm was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., including not only the direct costs of production, but also a reasonable proportion of "all other costs" (including company overhead) and profit.

For industry and industry group totals, some duplication is introduced by the inclusion of materials transferred from one establishment to another for mineral preparation. Wherever value of shipments and receipts is shown without further specification, it represents gross shipments.

Shipments of individual products—In the 1982 Census of Mineral Industries, information was collected on the output of about 200 individual mineral product items. In general, the figures of the 1982 and 1977 mineral censuses were confined to separate totals for each crude and each prepared mineral. Where significant, separate shipments figures were also obtained for crude minerals going to preparation plants and those going to consumers.

Figures were collected on both quantity and value of shipments. Shipments included commercial shipments and transfers of products to other operations of the same company. For products which are used to a significant extent within the same establishment for power or heat, and for minerals mined and prepared in the same establishment, total production or separate data on production for such uses were collected. Typically, production was also collected for products for which there are usually significant differences between the total production and total shipments as a result of stock changes.

For service industries, the amount received or due for services performed during 1982 was collected as a measure of output. For mine operators who also perform services, the amount received for such services was added to the total value of products shipped to determine total value of shipments and receipts for each establishment.

Capital expenditures—This item covers expenditures made during the year for development and exploration of mineral properties, for construction, and for purchased machinery chargeable to fixed assets accounts of the mineral establishment. They are the type for which depreciation, depletion, or Office of Minerals Exploration accounts are ordinarily maintained. Capital expenditures during 1982 were to be determined as "additions completed during the year plus construction in progress at the end of the year minus construction in progress at the beginning of the year." Reported capital expenditures were to include work done by contract, as well as by the mine forces. Expenditures for machinery and equipment were to include those made for replacement purposes, as well as those for additions to capacity. Excluded from these expenditures were costs of maintenance and repairs charged as current operating expense and expenditures for land and mineral rights.

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